



# $Z \rightarrow b\bar{b}$ - Analysis Status

CDF-NOTE 6036 coming soon!!!

*CDF-Italia Meeting*

*Pisa, Jul. 17th, 2002*

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## Triggers Summary:

We look at 2 trigger paths:

**Z\_LBB** ( $\sigma_{trg} \sim 12 nb$ )

- 2 jets with  $E_T > 10 GeV$
- 1 SVT+COT trk with  $P_T > 4$
- 1 SVT+COT trk with  $P_T > 6$
- both tracks with  $120\mu m < |d_0| < 1mm$
- $\Delta\phi_{tt} > 150^\circ$

**HIGH\_PT\_BJET** ( $\sigma_{trg} \sim 120 nb$ )

- 2 jets with  $E_T > 20 GeV$
- 2 SVT+COT trk with  $P_T > 2$
- both tracks with  $100\mu m < |d_0| < 1mm$

efficiency on signal =  $1.32 \pm 0.05\%$

Data analyzed =  $5.9 pb^{-1}$

Events  $\sim 50,000$

efficiency on signal =  $7.11 \pm 0.18\%$

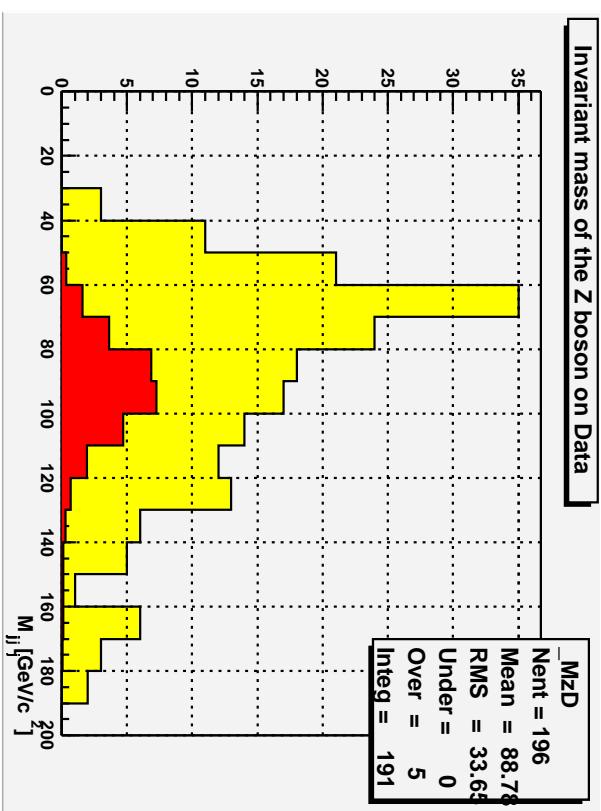
Data analyzed =  $1.4 pb^{-1}$

Events  $\sim 153,000$

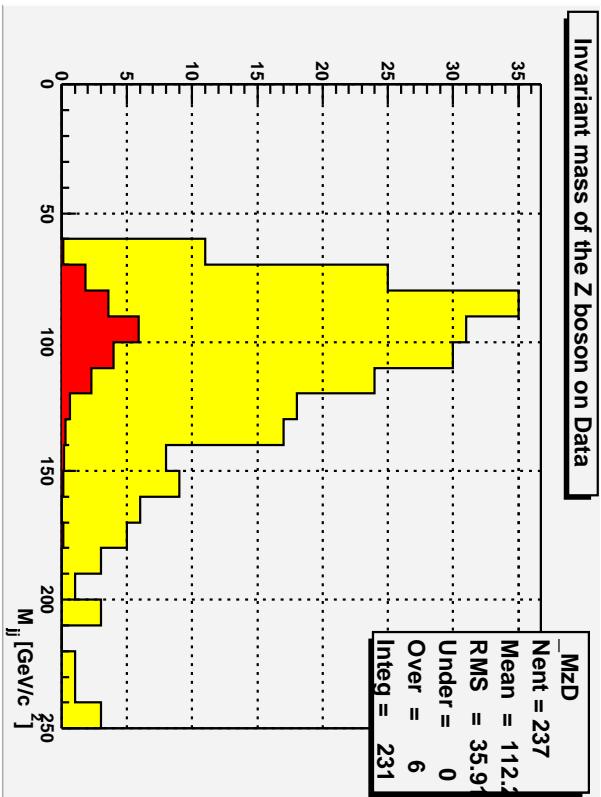
## Dijet Mass Plot

we require the presence of:

- 2 jets with uncorrected  $E_T > 10$  GeV
- 2 SecVtX tags
- $\Delta\phi_{jj} > 3$
- $|\eta| < 2.0$



n evts	Data	$Z \rightarrow b\bar{b}$
Z_BB	196	27
HIGH_PT_BJET	237	19



Z\_BB

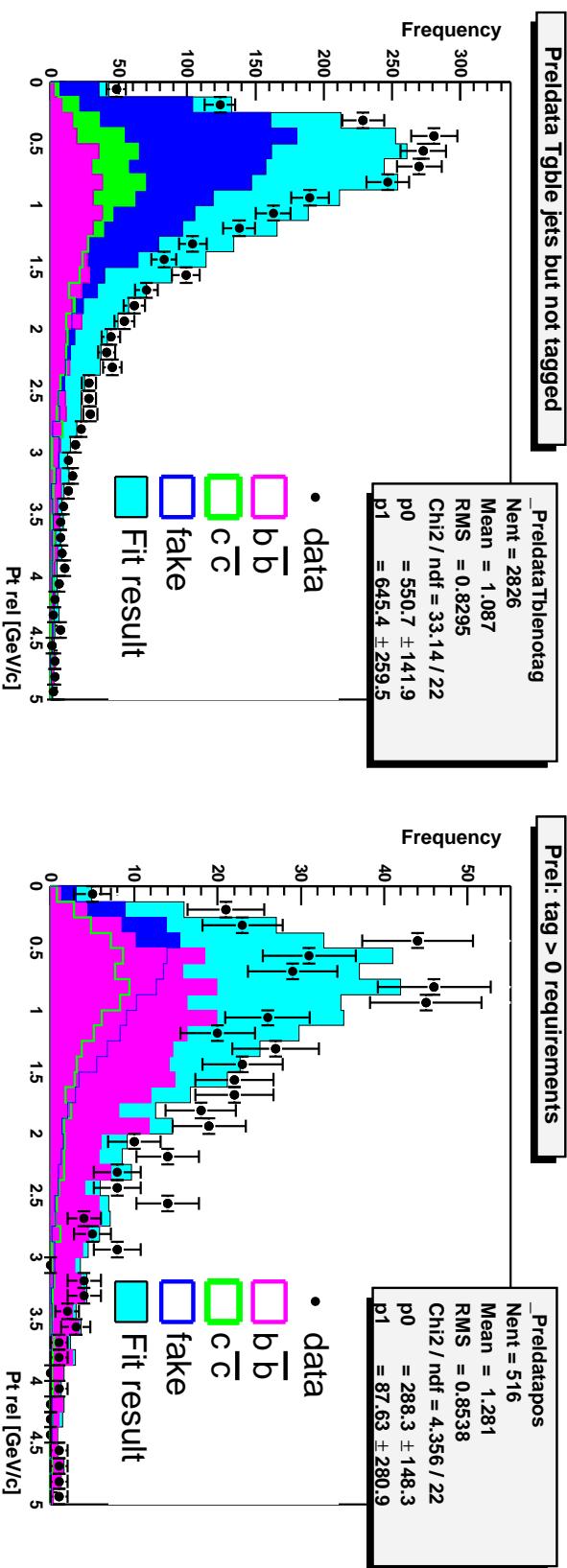
HIGH\_PT\_BJET

## Z\_BB Sample composition studies

Looking at muons in the central chambers with  $P_T > 2$  GeV and keeping the Run I shapes for the  $P_T^{rel}$  distribution for  $b$ ,  $c$  and *fakes* jet we perform a 3 component fit to the Run II distribution for tagble but not tagged and SECVTX tagged mouns jet. The fit yields :

$$f_b = 19.5 \pm 5.0\% \text{ and}$$

$$f_b = 55.9 \pm 28.7\% \text{ respectively} \quad \} \quad \epsilon_b^+ = \frac{N_{SECVTX}}{N_{ALL}} = 34.3 \pm 13.0\%$$



## .. Z\_BB Sample composition studies

On the other hand, we divide the data sample in classes according to the presence or not of a tag and a muon in the jets. A fit determine the non-b fraction due to *c* and *fakes* contributions as well as the b-fraction. The results are summarized in the table.

$\chi^2$	38.94/20
$\epsilon_b^+$	$0.344 \pm 0.066$
$\epsilon_b^-$	$0.026 \pm 0.006$
$\epsilon_g^+$	$0.048 \pm 0.005$
$\epsilon_g^-$	$0.012 \pm 0.001$
$F_{bb}^{no\mu}$	$0.088 \pm 0.040$
$F_{bg}^{no\mu}$	$0.005 \pm 0.040$
$F_{bb}^\mu$	$0.283 \pm 0.108$
$F_{bg}^\mu$	$0.018 \pm 0.124$